

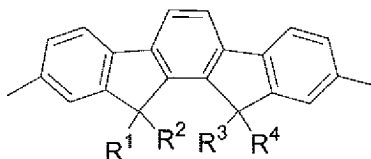
### REMARKS

The Applicant respectfully requests reconsideration in view of the amendment and the following remarks. The applicant has incorporated claim 5 into claim 1. In addition, the applicant has corrected the dependency of claim 7 to be dependent upon claim 1 instead of cancelled claim 6. In addition the applicant has incorporated claim 5 into claim 25 as newly added claim 26. The new formula added in claims 1 and 26 requires that the first repeat unit is linked through the 2- and 9- positions (see also page 4, lines 7-10 of the specification). No new matter has been added.

Since claim 5 has already been examined and considered by the Examiner the applicant believes that this amendment raises no new issues or requires no new search. The applicant also respectfully requests that the withdrawn claims be rejoined.

Claims 1-3, 5, 7-14, and newly added claim 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Bridging the Gap between Polyfluorene and Ladder-Poly-p-phenylene: Synthesis and Characterization of Poly-2,k8-indenofluorene, Macromolecules, 2000, 33, 2016-2020" (Setayesh et al.) in combination with "Dissertation, Oligo-und Poly (indenofluorene)..., Mainz, 2000, pp. 27 and 115" (Reisch) and US 5,777,070 (Inbasekaran) and evidences "Assemblies of conjugated polymers, Intermolecular and intramolecular effects on the photophysical properties of conjugated polymers, Pure Appl. Chem., Vol. 74, No. 11, pp. 2031-2044, 2002" (Kim). The applicant respectfully traverses this rejection.

The original claim 5 and now amended claim 1 requires that the first repeat unit is linked through the 2- and 9-positions as shown below:



In the specification at page 4, lines 7-10, the applicant discusses that this linkage is critical because it “maximizes conjugation through the repeat unit”. Polymers 1-5 in the applicant’s specification are also linked in the claimed position (linked through the 2- and 9-positions). The applicant believes that the data is commensurate in scope with the claims.

The Examiner repeats the previous arguments from the last office action on pages 2 to 5 of the Office Action. The applicant incorporates their previous response into this reply.

On pages 6 and 7 of the Final Office Action, the Examiner gives “Response to Arguments”, which have been filed on April 04, 2009. With respect to these statements, Applicants respectfully have the following comments:

- 1.) The Examiner states on page 6, fourth paragraph, of the Final Office Action, that on page 115 that Reisch teaches a mechanism where at least trimers and pentamers are formed. This statement is correct, but the Examiner didn’t recognize that these are ‘oligomers’ and not “polymers” (see the applicant’s claim 25) and that these oligomers are “homo-oligomers”, because they do only contain “cis-indenofluorene” units and no other units.
- 2.) Furthermore, the Examiner states on page 6, second paragraph of the Final Office Action, that Reisch teaches polymers, because in the title it says: ‘Oligo and Poly(indenofluorenes)’. A statement given only in the title of such a dissertation is in the applicant’s opinion not a disclosure for a polymer. But even if such a title would be such a disclosure, it must be stated again, that according to the present invention, only copolymers are claimed which contain beside the structural unit of formula (I<sub>r</sub>) at least a second repeating unit. Such copolymers are not disclosed in Reisch.

3.) With respect to Kim, the Examiner states on page 6, sixth paragraph of the Final Office Action,

“Kim evidences that strong intermolecular interferences deteriorate emission properties of conjugated polymers (see page 2040). Introducing of bulky Naphthalene group decreases the above interaction, since it is disturbing chain packing.”

Again, the applicant fails to see what this statement has to do with the present invention. In the earlier Office Actions, the Examiner cited another passage relating to the introduction of cis-linkages in ParaPhenylene-Vinylene (PPV) polymers (see the page 4 of the Office Action mailed August 15, 2008, see the page 4 of the Office Action mailed January 14, 2009).

4.) With respect to the analysis of Table I of the specification of the present application, disclosed in this table is polymer 5 according to the present invention as well as comparative polymers 6 to 9. With respect to this table, the Examiner states in the first full paragraph at page 7 of the Final Office Action, that the “data of Table 1 shows that isomerisation is just one of a few parameters, determining the properties of the polymer.” This statement is true for the comparison of polymer 5 with polymers 7 to 9, because these polymers not only differ with respect to the cis/trans-isomerization but also differ with respect to the substitution groups. However, this statement is not true for the comparison of polymer 5 with polymer 6, because in this case, both polymers differ only with respect to the cis/transisomerization. Consequently, in this case, isomerisation is the only parameter wherein both polymers differ and therefore, the different properties are directly a result of this difference! It is correct as stated by the Examiner that comparative polymer 6 has a slightly better half life of 140 hours compared to 120 hours of the inventive polymer. Nevertheless, the Examiner should recognize that there are four other properties of the polymers which are described (i.e. “V at 100 cd/m<sup>2</sup>”, “Colour Shift”, “ $\Delta V^3$ ” and “% Burn in”). **With respect to these four properties, the polymer according to the present invention has significant better properties than the comparative example 6.** In particular,

the % burn is only 3% for example 5 versus 12% for comparative example 6. This is a factor of 4 greater. The color shift was 0.03 for example 5 compared to 0.06 for comparative example 6. This is half the shift compared to comparative example 6. The  $\Delta V^3$  was 1.0 for example 5 versus 2.8 for comparative example 6. The  $\Delta V^3$  is about one third the value for the applicant's example 5 compared to comparative example 6. Lastly, the V at 100 cd/m<sup>3</sup> is 4.3 for example 5 compared to 5.7 for comparative example 6. Each of these improvements in combination was not obvious for a person of ordinary skill in the art. For the above reasons, the applicant respectfully request that this rejection be withdrawn.

A statement that modifications of the prior art to meet the claimed invention would have been "obvious to one of ordinary skill in the art at the time the invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See MPEP § 2143.01 IV. "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007) quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Furthermore, the Examiner cannot selectively pick and choose from the disclosed parameters without proper motivation as to a particular selection. The mere fact that a reference may be modified to reflect features of the claimed invention does not make the modification, and hence the claimed invention, obvious unless the prior art suggested the desirability of such modification. *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430 (Fed. Cir. 1990); *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992). Thus, it is impermissible to simply engage in a hindsight reconstruction of the claimed invention where the reference itself provides no teaching as to why

the applicant's combination would have been obvious. *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). For the above reasons, this rejection should be withdrawn.

Applicant believes no fee is due with this response. However, if a fee is due, the Commissioner is authorized to charge or credit any overpayment to Deposit Account No. 03-2775 under Order No. 14113-00027, from which the undersigned is authorized to draw.

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Respectfully submitted,

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